1213-MA235 Probability

First Semester 2012/2013

Lecture times and locations

Monday 1300-1400 AC214

Thursday 1300-1400 AC201

NOTE: two different lecture rooms!

Course lecturer

Dr. Milovan Krnjajić

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office hours: Thu 1600-1800 or by appointment (also open door policy)

Course web page

All information will be communicated through the Blackboard or during the lectures.

Course description

This is an introductory course to probability theory and its applications for students of Mathematics and Financial Mathematics. A prerequisite is a course in Calculus. Topics will include: probability spaces, properties of probabilities, conditional probability, independence of events; combinatorial analysis, sampling (ordered, unordered, with/without replacement); discrete and continuous random variables (r.v.), probability mass/density functions (PMF/PDF), cumulative distribution functions (CDF), Bernoulli, Binomial, Poisson distribution, functions of r.v. (change of variable), sums of independent r.v., expectation of r.v.; joint probability distributions, conditional r.v.-s (discrete and continuous); properties of expectation, probability generating functions, moment generating functions, important inequalities (Markov, Chebyshev), Central Limit Theorem, Law of Large Numbers.

Course work and examination

Continuous assessment (CA) will include a combination of homework assignments and in-class quizzes; CA will contribute (about) 25-30% to the final mark. Examination will be according to the University rules and schedule.

Reference books

C. Grinstead and L. Snell, *Introduction to Probability*, American Mathematical Society.

NOTE: a version of the book available online at
http://www.dartmouth.edu/ chance/teaching_aids/books_articles/probability_book/book.html

Hoel, Port, and Stone, *Introduction to Probability Theory*, Houghton Mifflin.

S.Ross, *A First Course in Probability*, Prentice Hall.

D.Stirzaker, *Probability and Random Variables*, Cambridge University Press.

Y.A.Rozanov *Probability Theory: A Concise Course*, Dover Publications.